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Before the
Federal Communications Commission
Washington, D.C. 20554

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In the Matter of	)	
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2000 Biennial Regulatory Review	)	WT Docket No. 01-14
Spectrum Aggregation Limits	)	
For Commercial Mobile Radio Services	)	
	)	
	)	
	)	

REPORT AND ORDER

Adopted: November 8, 2001 **Released:** December 18, 2001

By the Commission: Chairman Powell issuing a separate statement; Commissioner Copps dissenting and issuing a statement.

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I. INTRODUCTION

1. In this Report and Order, we complete our reexamination of the need for the Commercial Mobile Radio Service ("CMRS") spectrum aggregation limit, or "spectrum cap,"[1] and cellular cross-interest[2] rules as part of our 2000 biennial review of the Commission's regulations, pursuant to section 11 of the Communications Act of 1934, as amended ("Communications Act").[3] Upon careful review of the record and publicly available evidence, we will "sunset" the spectrum cap rule effective January 1, 2003. The period between now and the sunset date will allow the markets to adjust and permit the Commission to consider, in conjunction with the United States Department of Justice ("DOJ"), substantive and processing guidelines for this agency's case-by-case review of transactions that would raise concerns similar to those that the spectrum cap was designed to address.

2. We further decide today, on the basis of the current state of competition in CMRS markets, to raise the spectrum cap to 55 MHz in all markets during the transition period. We believe that this change should address certain carriers' concerns about near-term spectrum capacity constraints in the most constrained urban areas during the period until the rule is eliminated and reliance solely on case-by-case review of CMRS spectrum aggregation is initiated. In addition, we eliminate the cellular cross-interest rule in Metropolitan Statistical Areas ("MSAs") in recognition that the cellular carriers in these areas no longer enjoy significant first-mover advantages. We decide to retain the cellular cross-interest rule in Rural Service Areas ("RSAs"), where the cellular incumbents generally continue to dominate. However, we will entertain and be inclined to grant waivers of the rule for those RSAs that exhibit market conditions under which cellular cross-interests may be permissible without significant likelihood of substantial competitive harm. We will reassess the continued need for the cellular cross-interest rule in RSAs during the 2002 biennial review.

II. EXECUTIVE SUMMARY

3. In our oversight of CMRS spectrum aggregation, we have traditionally relied on prophylactic rules of general applicability. Under the current CMRS spectrum cap, no licensee in the broadband Personal Communications Services ("PCS"), cellular service, or Specialized Mobile Radio ("SMR") service regulated as CMRS may have an attributable interest in more than 45 MHz of spectrum in these services with significant geographic overlap in an MSA, or more than 55 MHz in an RSA.[4] The current

[1] 47 C.F.R. § 20.6.

[2] *Id.* § 22.942.

[3] 47 U.S.C. § 161. This proceeding is the second biennial review of the CMRS spectrum aggregation limits. *See* 1998 Biennial Regulatory Review, Spectrum Aggregation Limits for Wireless Telecommunications Carriers, WT Docket No. 98-205, *Report and Order*, 15 FCC Rcd 9219 (1999) ("*First Biennial Review Order*"), *aff'd, Memorandum Opinion and Order on Reconsideration,* 15 FCC Rcd 22072 (2000) ("*2000 Spectrum Cap Recon Order*"), *appeal pending sub nom. Cingular Wireless LLC v. FCC*, No. 01-1006 (D.C. Cir., filed Jan. 5, 2001). In September 1999, we generally found that these spectrum aggregation limits were still necessary to safeguard competition in CMRS markets, although we made certain modifications to each of them to provide more flexibility in permissible investment and partnering arrangements among carriers. *See First Biennial Review Order*, 15 FCC Rcd at 9223 ¶ 6.

[4] *See* 47 C.F.R. § 20.6(a). This rule is described in more detail in section III.A, *infra*.

cellular cross-interest rule prohibits a licensee for one cellular channel block in a Cellular Geographic Service Area ("CGSA"), or a party that controls or owns a controlling or otherwise attributable interest in such a licensee, from holding a direct or indirect ownership interest of more than five percent in a licensee for the other channel block in an overlapping CGSA.[5]

4. As tools for review of the potential anti-competitive effects of spectrum aggregation, both a spectrum cap rule (or a cross-interest rule) and case-by-case review present certain advantages. In many circumstances, rules may provide for greater certainty, faster processing, and expenditure of fewer industry and agency resources. However, a bright-line approach can be inflexible, potentially permitting problematic transactions and precluding transactions that would serve the public interest. While possibly requiring greater resources on the part of both transacting parties and the reviewing agency, case-by-case review and enforcement mechanisms allow greater regulatory flexibility and greater attention to the actual circumstances of a particular transaction or alleged misconduct. Moreover, a substantial degree of certainty and efficiency can be maintained under a case-by-case approach that employs appropriate guidelines or that is based on established precedent.

5. Under our biennial review, we examine whether regulations that apply to the operations and activities of providers of telecommunications service are "no longer necessary in the public interest as the result of meaningful economic competition."[6] With regard to the product market for mobile telephony, we find that there is "meaningful economic competition" in urban markets generally, but that rural markets are much less competitive than urban markets, with most rural counties having three or fewer competitors currently offering such services in any portion of the county. We, therefore, go on to consider under section 11 whether the spectrum cap and cellular cross-interest rules remain necessary or whether competitive market forces together with other regulatory tools can better serve the public interest.

6. On balance, and in light of the strong growth of competition in CMRS markets since the initiation of the spectrum cap, we decide today that we should move from the use of inflexible spectrum aggregation limits to case-by-case review of spectrum aggregation and enforcement of other safeguards applicable to such carriers based on evidence of misconduct. However, because it is important that case-by-case analysis ensure that the great benefits of competition in CMRS markets continue to be realized, and because we do not currently have a developed body of precedent in case-by-case review for these markets to guide both us and transacting parties, we determine that a sunset period is necessary in order to consider appropriate processing and substantive guidelines, to reallocate or enhance Commission resources, and to give the market time to adjust and prepare for the change in an orderly way. We further determine that a transition period that ends January 1, 2003, should be sufficient. Thus, the CMRS spectrum cap is eliminated, effective January 1, 2003. In the interim, we raise the spectrum cap to 55 MHz in all markets for the duration of its existence.

7. With respect to the cellular cross-interest rule, we determine that the rule is no longer necessary in MSAs because the cellular duopoly conditions that prompted the rule's adoption no longer exist. Thus, under current market conditions in MSAs, there is no reason to treat the aggregation of cellular spectrum any differently than other aggregation of CMRS spectrum. We further determine that no transition period is necessary to eliminate this rule. By contrast, in RSAs, the record, though limited on this point, indicates that competition to the incumbent cellular licensees is not as developed as in MSAs. Thus, based on the record in this proceeding, it appears that a combination of interests in cellular

[5] *See id.* § 22.942(a). This rule is described in more detail in section III.B, *infra*.

[6] 47 U.S.C. § 161.

licensees would more likely result in a significant reduction in competition. We, therefore, retain the cellular cross-interest rule in RSAs, subject to waiver of the rule for those RSAs that exhibit market conditions under which cellular cross-interests may be permissible without a significant likelihood of substantial competitive harm. We will reassess the continued need for this rule as part of the next biennial review.

8. Finally, we amend the divestiture provision of the cellular cross-interest rule[7] to conform to the divestiture provision of the spectrum cap rule[8] and clarify the requirements governing divestiture trusts.

III. BACKGROUND

A. CMRS Spectrum Cap

9. *CMRS Spectrum Aggregation Limit.* The CMRS spectrum cap, set forth at section 20.6 of the Commission's rules, provides:

> No licensee in the broadband PCS, cellular, or SMR services (including all parties under common control) regulated as CMRS . . . shall have an attributable interest in a total of more than 45 MHz of licensed broadband PCS, cellular, and SMR spectrum regulated as CMRS with significant overlap in any geographic area, except that in Rural Service Areas (RSAs), . . . no licensee shall have an attributable interest in a total of more than 55 MHz of licensed broadband PCS, cellular, and SMR spectrum regulated as CMRS with significant overlap in any RSA.[9]

No more than 10 MHz is attributed to an entity when calculating SMR spectrum under the cap.[10] A total of 180 MHz of spectrum designated for services that could be regulated as CMRS is subject to the 45/55 MHz spectrum cap: 120 MHz of broadband PCS spectrum, 50 MHz of cellular spectrum, and 10 MHz of attributable SMR spectrum.[11]

10. The Commission's rules provide that controlling interests are attributable.[12] Non-controlling ownership interests of twenty percent or more (forty percent if held by a small business or rural telephone company, or certain passive institutional investors), including general and limited partnership interests, voting and non-voting stock interests, or any other equity interest, also are attributable.[13] Officers and directors are attributed with their company's holdings, as are persons who manage certain operations of licensees, and licensees that enter into certain joint marketing arrangements with other

[7] *See* 47 C.F.R. § 22.942(c).

[8] *See id.* § 20.6(e).

[9] *Id.* § 20.6(a).

[10] *See id.* § 20.6(b).

[11] *See* 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, *Notice of Proposed Rulemaking*, 16 FCC Rcd 2763, 2764 ¶ 2 (2001) ("*NPRM*").

[12] *See* 47 C.F.R. § 20.6(d)(1).

[13] *See id.* § 20.6(d)(2), (3), (4), (6).

licensees.[14] Debt does not constitute an attributable interest for purposes of the spectrum cap, and securities conferring potential future equity interests (such as warrants, options, or convertible debentures) are not considered attributable until they are converted or exercised.[15]

11. Determining whether a "significant overlap" exists is necessary because of the use of different licensing and service areas for cellular, broadband PCS, and SMR spectrum.[16] When a PCS license and a cellular or SMR license are involved, a significant overlap exists when ten percent or more of the population of the designated PCS licensed service area is within the CGSA or SMR service area(s) in question.[17]

12. *History of the CMRS Spectrum Cap.* The CMRS spectrum cap was established in 1994, in anticipation of PCS licensing, and in recognition that direct competition was likely to develop among cellular, broadband PCS, and SMR.[18] Previously, the Commission had imposed service-specific limitations on the aggregation of broadband PCS spectrum and on cellular/PCS cross-ownership.[19] In adopting the CMRS spectrum cap to complement these latter two rules, the Commission found that an overall cap applicable to cellular, broadband PCS, and SMR spectrum would add certainty to the marketplace without sacrificing the benefits of pro-competitive and efficiency-enhancing aggregation.[20]

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[14] *See id.* § 20.6(d)(7), (9), (10).

[15] *See id.* § 20.6(d)(5).

[16] For spectrum cap purposes, the relevant geographic area for cellular spectrum is the CGSA, *i.e.*, the composite 32 dBu service area contour within which the cellular system is entitled to protection from interference. *See id.* § 22.911. For broadband PCS spectrum, the relevant area is the licensed service area, which can be either a Major Trading Area ("MTA") or a Basic Trading Area ("BTA"). *See id.* § 24.202. (BTAs and MTAs are based on copyrighted material owned by Rand McNally & Company). SMR service is licensed by economic areas ("EAs") or by MTAs for auctioned licenses or on a site-by-site basis for pre-auction incumbent licensees. *See id.* §§ 90.661, 90.667, 90.681, 90.693.

[17] *See id.* § 20.6(c). Where both MSA and RSA areas are included in a single PCS licensed area, those areas within MSAs where total spectrum exceeds 45 MHz and those areas within RSAs where total spectrum exceeds 55 MHz are considered in the calculation. *See 2000 Spectrum Cap Recon Order*, 15 FCC Rcd at 22081 ¶ 22. Where only PCS licenses are involved, however, this analysis does not apply, and any overlap between BTA-licensed and MTA-licensed spectrum is considered significant. Situations involving overlap of CGSAs generally currently do not arise because, as discussed below, such holdings generally are prohibited under the cellular cross-interest rule. *See* 47 C.F.R. § 22.942.

[18] *See* Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, *Third Report and Order*, 9 FCC Rcd 7988, 8100-01 ¶¶ 238-40 (1994) ("*CMRS Third Report and Order*").

[19] *See* Amendment of the Commission's Rules to Establish New Personal Communications Services, *Second Report and Order*, 8 FCC Rcd 7700, 7728 ¶ 61, 7745 ¶ 106 (1993) (limiting broadband PCS licensees to 40 MHz of total spectrum allocated to broadband PCS; limited cellular licensees to no more than 10 MHz of broadband PCS spectrum in their cellular service areas); Amendment of the Commission's Rules to Establish New Personal Communications Services, *Memorandum Opinion and Order*, 9 FCC Rcd 4957, 4984 ¶ 67 (1994) (revising PCS/cellular cross-interest rule to allow cellular licensees to increase their holdings of broadband PCS spectrum from 10 MHz to 15 MHz after January 1, 2000).

[20] *See CMRS Third Report and Order*, 9 FCC Rcd at 8100-07. In seeking to prevent excessive aggregation of spectrum, the Commission included the broadband PCS and cellular spectrum under the cap because those services accounted for a large majority of the spectrum used to provide CMRS. *Id.* at 8108 ¶ 259. SMR spectrum was included because SMR operators had the potential to offer services nearly identical to those (continued....)

The Commission explained that, if licensees were to aggregate sufficient amounts of CMRS spectrum, it would be possible for them, unilaterally or in combination, to exclude efficient competitors, to reduce the quantity or quality of services provided, or to increase prices to the detriment of consumers.[21] The Commission determined that the imposition of a cap on the amount of covered spectrum that a single entity could control in any one geographic area would limit the ability of any entity to increase prices artificially.[22] The Commission also found that a cap on broadband PCS, SMR, and cellular spectrum holdings would prevent licensees from artificially withholding capacity from the marketplace.[23] The Commission concluded that a 45 MHz cap provided a "minimally intrusive means" for ensuring that the mobile communications marketplace remained competitive and preserved incentives for efficiency and innovation.[24]

13. In 1996, in light of the U.S. Court of Appeals for the Sixth Circuit's ruling in *Cincinnati Bell Telephone Co. v. FCC* remanding the cellular/PCS cross-ownership restriction,[25] the Commission eliminated the service-specific limitations on the aggregation of broadband PCS spectrum and on cellular/PCS cross-ownership, and decided to rely solely on the 45 MHz CMRS spectrum cap to ensure that multiple service providers would be able to obtain broadband PCS spectrum and thereby facilitate the development of competitive markets for wireless services.[26] The Commission analyzed potential market concentration and again found that a 45 MHz spectrum cap was sufficient "to avoid excessive concentration of licenses and promote and preserve competition" while "maintaining incentives for innovation and efficiency."[27]

14. In the *First Biennial Review Order*, the Commission decided substantially to retain the CMRS spectrum cap, together with the cellular cross-interest rule, but ordered modifications to reflect circumstances in rural areas and to permit passive institutional investors to acquire greater non-attributable interests in CMRS carriers.[28] The Commission concluded that the spectrum cap remained a simple and effective means of mitigating the competitive consequences of the spectrum-related barriers

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offered with cellular and broadband PCS licenses, and therefore might seek to accumulate SMR and broadband PCS spectrum to limit entry by other providers. *Id.* at 8109 ¶ 261. In contrast, other services, such as narrowband PCS and paging, were excluded from the cap because there was little risk that an entity could use narrowband allocations to exert undue market power over CMRS as a whole. *Id.* at 8111 ¶ 267. Satellite services were excluded from the cap because of significant differences between those services and the services found subject to the cap. *Id.* at 8112 ¶ 269.

[21] *See id.* at 8104 ¶ 248

[22] *See id.*

[23] *See id.* at 8108 ¶ 258.

[24] *See id.* at 7999 ¶ 16.

[25] *Cincinnati Bell Telephone Co. v. FCC*, 69 F.3d 752 (6th Cir. 1995).

[26] *See* Amendment of Parts 20 and 24 of the Commission's Rules -- Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap; Amendment of the Commission's Cellular/PCS Cross-Ownership Rule, WT Docket 96-59, *Report and Order*, 11 FCC Rcd 7824, 7869 ¶ 94 (1996) (*"CMRS Spectrum Cap Report and Order"*), *aff'd*, 12 FCC Rcd 14031 (1997) (*"BellSouth MO&O"*), *aff'd sub nom. BellSouth Corp. v. FCC*, 162 F.3d 1215 (D.C. Cir. 1999).

[27] *CMRS Spectrum Cap Report and Order*, 11 FCC Rcd at 7869 ¶¶ 94-95.

[28] *See First Biennial Review Order*, 15 FCC Rcd at 9249 ¶ 66.

to entry in CMRS markets, and found that the 45 MHz limit struck the proper balance (in non-rural areas) between preserving opportunities for competitive entry and permitting carriers to achieve economies of scope and scale. The Commission did, however, raise the cap to 55 MHz in RSAs. This decision was based on findings that the potential consumer benefits in rural areas from competitive, facilities-based entry were likely to be limited by the economics of offering service to lower-density populations.[29] The Commission also amended the spectrum cap rule to provide that equity interests of up to forty percent held by passive institutional investors are not attributable.[30] At the same time, the Commission adopted a waiver process to meet the spectrum requirements for third-generation ("3G") and other advanced wireless services until additional spectrum for next-generation applications could be allocated.[31]

B. Cellular Cross-Interest Rule

15. *Cellular Cross-Interest Rule.* Section 22.942 of the Commission's rules limits the ability of parties to have interests in cellular carriers on different channel blocks in a single geographic area.[32] To the extent licensees on different channel blocks have any degree of overlap between their respective CGSAs, the rule prohibits any entity with an attributable interest in one licensee from having a direct or indirect ownership interest of more than five percent in the other licensee.[33] An attributable interest is defined generally to include an ownership interest of twenty percent or more, as well as any controlling interest.[34] However, an entity may have non-controlling and otherwise non-attributable direct or indirect ownership interests of less than twenty percent in licensees for different channel blocks in overlapping CGSAs.[35] Divestiture of interests as a result of a transfer of control or assignment of authorization must occur prior to consummating the transfer or assignment.[36]

16. *History of the Cellular Cross-Interest Rule.* The cellular cross-interest rule was adopted in 1991,[37] when cellular licensees were the predominant providers of mobile voice services. In adopting

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[29] *See id.* at 9256-57 ¶ 84.

[30] *See id.* at 9265 ¶ 103.

[31] *See id.* at 9255-56 ¶ 82 (describing factors that will be reviewed when considering a request for permanent waiver of the spectrum cap to provide advanced wireless services). As discussed in the *First Biennial Review Order*, the Commission will consider granting a waiver of the cap if an applicant can credibly demonstrate in a particular geographic area that the applicable limit is having a significant adverse effect on its ability to provide advanced wireless services. *See id.*

[32] 47 C.F.R. § 22.942.

[33] *See* 47 C.F.R. § 22.942(a).

[34] *See id.* § 22.942(d)(1), (2). Section 22.942(d) contains other rules to determine attributable interests. *See id.* § 22.942(d)(3)-(9).

[35] *See id.* § 22.942(b).

[36] *See id.* § 22.942(c).

[37] *See* Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, *First Report and Order and Memorandum Opinion and Order on Reconsideration*, 6 FCC Rcd 6185, 6228-29 ¶¶ 103-06 (1991) ("*Cellular First Report and Order*"). The original cellular rules restricted cellular cross-ownership by limiting ownership of cellular A block licenses to non-wireline carriers and ownership of cellular B block licenses to wireline carriers. These restrictions were lifted for cellular unserved area licenses in 1989 and for all cellular (continued....)

this rule, the Commission stated that "in a service area where only two cellular carriers are licensed per market, the licensee on one frequency block in a market should not own an interest in the other frequency block licensee in the same market."[38] Thus, the Commission adopted restrictions on a party's ability to hold ownership interests in both cellular licensees in the same geographic area "[i]n order to guarantee the competitive nature of the cellular industry and to foster the development of competing systems."[39] In the *First Biennial Review Order*, the Commission determined that the cellular cross-interest rule was still required to protect against substantial anticompetitive threats from common ownership between the two cellular carriers in any given geographic area. The Commission found that cellular carriers served approximately eighty-six percent of nationwide mobile telephone subscribers at the end of 1998, and determined that the percentage was less than seventy in only a few major metropolitan markets.[40] However, because competition from other services had increased on the whole since the rule's inception in 1991, the Commission relaxed the rule's attribution standards to the current limits described above.[41]

C. Notice of Proposed Rulemaking

17. In the *NPRM* in this proceeding,[42] the Commission initiated a reexamination of the need for CMRS spectrum aggregation limits as part of our 2000 biennial regulatory review of the Commission's telecommunications regulations. Section 11 of the Communications Act requires the Commission, every two years, to review all regulations that apply to "the operations or activities of any provider of telecommunications service" and to "determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service."[43] The *NPRM* initiated the Commission's second comprehensive review of the CMRS spectrum cap and cellular cross-interest rules, the two regulations that currently limit the aggregation of broadband CMRS spectrum.

18. The *NPRM* requested public comment, including the submission of specific market data and studies, to assist the Commission's determination of whether the CMRS spectrum aggregation rules are no longer necessary in the public interest and, if they are necessary, whether our existing spectrum limits should be modified.[44] First, comment was requested on whether spectrum aggregation limits, including the cellular cross-interest rule, continue to enhance meaningful competition in today's CMRS marketplace.[45] In this regard, comment was sought on the development of meaningful economic competition, as well as the potential competitive consequences of consolidation that may occur without

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licenses in 1994. *See* Amendment of the Commission's Rules for Rural Cellular Service, *Order on Reconsideration of Second Report and Order*, 4 FCC Rcd 5377 (1989); Revision of Part 22 of the Commission's Rules Governing the Public Mobile Services, *Report and Order*, 9 FCC Rcd 6513 (1994).

[38] *Cellular First Report and Order*, 6 FCC Rcd at 6628 ¶ 103.

[39] *Id.* at 6628 ¶ 104.

[40] *First Biennial Review Order*, 15 FCC Rcd at 9232 ¶ 25, 9251 ¶ 71.

[41] *Id.* at 9252-53 ¶¶ 74-75.

[42] *NPRM*, 16 FCC Rcd at 2764 ¶ 1.

[43] 47 U.S.C. § 161(a)(1), (2).

[44] *See NPRM*, 16 FCC Rcd at 2771 ¶ 13.

[45] *See id.*

spectrum aggregation limits.[46] Next, comment was requested on spectrum management and other regulatory considerations, particularly in the context of spectrum suitable for broadband CMRS.[47] Under this inquiry, the Commission sought to examine any costs that the spectrum aggregation limits may impose on the development of advanced wireless services, the possible benefits of prophylactic standards, and whether these standards promote efficiency.[48] In addition, comment was sought on how recent international developments should affect our public interest determination.[49]

19. We also sought comment on the implications for our processes of DOJ's antitrust law enforcement responsibilities.[50] We asked whether we should defer to DOJ in CMRS license transfers, and, if so, what form such deference should take.[51] Specifically, we asked whether all transfers resulting in consolidation of spectrum below a certain threshold should be exempt from section 310(d) competitive analysis.[52] We acknowledged that antitrust laws may place adequate focus on mergers that threaten to curtail actual competition. Therefore, we asked whether we may, and should, refrain from independent review of the competitive effects of a transaction that is subject to some specified level of DOJ review, and if so, what that level should be.[53]

20. The *NPRM* also requested comment on whether specific attributes of the CMRS spectrum cap and cellular cross-interest rules should be modified, if those rules are generally retained, to allow some of the benefits that may arise from additional cross-ownership interests.[54] To the extent that certain revisions would reduce any costs of the rules or promote public interest objectives, we sought comment on how to implement them without significantly increasing barriers to entry for new competitors or reducing benefits to wireless consumers.[55]

21. In response to the *NPRM*, the Commission received fifteen comments and fifteen reply comments from a total of twenty-five parties. Those parties, and the abbreviated names used in this Report and Order, are set forth in Appendix A. In addition, Appendix A identifies and provides short-form references for the economic and technical analyses submitted as attachments to several of the comments and reply comments.

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[46] *See id.*

[47] *See id.*

[48] *See id.*

[49] *See id.*

[50] *See id.* at 2775, ¶ 20.

[51] *See id.*

[52] *See id;* 47 C.F.R. § 310(d).

[53] *See NPRM*, 16 FCC Rcd at 2771 ¶ 13.

[54] *See id.* at 2787 ¶ 46.

[55] *See id.* at 2787-90 ¶¶ 46-57.

IV. DISCUSSION

A. Standard for Decision

1. Section 11 of the Communications Act

22. The 1996 Act significantly amended the Communications Act of 1934 to permit and encourage competition in various communications markets.[56] Congress anticipated that the development of competition would lead market forces to reduce the need for regulation.[57] Section 11 of the Communications Act, which was added by the 1996 Act, provides that every two years the Commission shall review all regulations that apply to "the operations or activities of any provider of telecommunications service" and "determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service."[58] Section 11 further provides that in carrying out this review, the Commission "shall repeal or modify any regulation it determines to be no longer necessary in the public interest."[59]

23. Consistent with section 11, the Commission stated in the *NPRM* that its fundamental inquiry is whether, as a result of meaningful economic competition among providers of telecommunications services, spectrum aggregation limits are no longer necessary in the public interest.[60] The Commission sought comment on what constitutes "meaningful economic competition" under section 11, and to what degree the relevant competitive conditions have changed since the Commission's last biennial review of these rules.[61] If meaningful economic competition were found to exist, the Commission asked whether this would mean that spectrum aggregation limits have served their purpose and are no longer in the public interest, or whether public interest considerations nevertheless would warrant continued use of spectrum aggregation limits.[62]

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[56] *See* Telecommunications Act of 1996, Pub. Law No. 104-104, 110 Stat. 56 (1996) ("1996 Act"), introductory statement (Act was intended "[t]o promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.").

[57] *See* Joint Managers' Statement, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 113 (1996) at 1 (stating that the 1996 Act would establish a "pro-competitive, deregulatory national policy framework").

[58] 47 U.S.C. § 161(a)(2). Section 11 states:

> (a) BIENNIAL REVIEW OF REGULATIONS. – In every even-numbered year (beginning with 1998), the Commission -- (1) shall review all regulations issued under this Act in effect at the time of the review that apply to the operations or activities of any provider of telecommunications service; and (2) shall determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service.
>
> (b) EFFECT OF DETERMINATION. – The Commission shall repeal or modify any regulation it determines to be no longer necessary in the public interest.

[59] *Id.* § 161(b).

[60] *See NPRM*, 16 FCC Rcd at 2770 ¶ 12.

[61] *See id.*

[62] *See id.*

24. Commenters differ on how section 11 should be applied and whether there might be public interest reasons to retain spectrum aggregation limits if meaningful economic competition exists. For example, Cingular and Verizon argue that section 11 places the burden on proponents of the spectrum cap to show why retention of the cap is in the public interest, and on the Commission to show why the spectrum cap and cellular cross-interest rules are necessary.[63] On the other hand, Leap argues that section 11 places the burden on opponents of the cap to demonstrate why it should be modified.[64] Leap argues that section 11 does not establish a presumption that a rule is no longer necessary and does not disturb the basic principle under the Administrative Procedure Act ("APA") that an agency must justify its actions.[65] WorldCom argues that section 11 requires the Commission affirmatively to determine that a rule is not necessary in order to eliminate the rule, and that section 11 does not establish a presumption that the spectrum aggregation rules are no longer necessary.[66] CTIA argues that whatever the precise requirements for deletion of a rule pursuant to section 11, no special burden is imposed on those seeking elimination of the rule.[67] Thus, CTIA contends that meaningful economic competition is a "sufficient – but not necessary – condition for eliminating a particular regulation."[68]

25. We conclude that we need not, for purposes of this proceeding, go beyond the plain meaning of the text of section 11 of the Communications Act. The language places an obligation on the Commission to "determine" if the regulation in question "is no longer necessary in the public interest as the result of meaningful economic competition."[69] The Communications Act then explicitly provides that "the Commission *shall* repeal or modify" any regulation that it determines is no longer necessary in the public interest as the result of meaningful economic competition.[70] The statutory language does not impose any particular burdens on the opponents or proponents of a particular rule, but rather places the burden on the Commission to make the requisite determinations. In exercising its obligation under section 11, the language suggests that the Commission must examine why the rule was "necessary" in the first place and whether it is necessary any longer. Thus, in making the determination whether a rule remains "necessary" in the public interest once meaningful economic competition exists, the Commission must consider whether the concerns that led to the rule or the rule's original purposes may be achieved without the rule or with a modified rule.

26. The primary public interest purpose underlying the original adoption of the spectrum aggregation limits was to promote pro-competitive ends in CMRS markets. In initially setting the spectrum cap in 1994, the Commission's goal was to "discourage anticompetitive behavior while at the

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[63] *See* Verizon Comments at 5-7; Cingular Reply Comments at 3-4; *see also* AT&T Comments at 4-5.

[64] *See* Leap Reply Comments at 34-35.

[65] *See id.*; *see generally* Administrative Procedure Act, 5 U.S.C. § 551 *et seq.*

[66] *See* WorldCom Reply Comments at 4-6.

[67] *See* CTIA Comments at 4-9.

[68] *See id.* at 5.

[69] 47 U.S.C. § 161(a)(2). Section 11(a) requires the Commission to determine "whether any of these regulations are no longer in the public interest because competition between providers renders the regulation no longer meaningful." *See* Joint Explanatory Statement of the Committee of Conference, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 113, at 69 (1996).

[70] 47 U.S.C. § 161(b) (emphasis added).

same time maintaining incentives for innovation and efficiency."[71] The Commission found that its "goal of preventing anticompetitive outcomes" could be accomplished by creating a cap on broadband PCS, cellular, and SMR licensees, which would "prevent licensees from artificially withholding capacity from the market."[72] Consistent with this goal, the Commission stated that the spectrum cap sought "to promote diversity and competition in mobile services, by recognizing the possibility that mobile service licensees might exert undue market power or inhibit market entry by other service providers if permitted to aggregate large amounts of spectrum"[73] Furthermore, the absence of a spectrum cap could undermine other statutory goals related to the promotion of competition, "such as the avoidance of excessive concentration of licenses and the dissemination of licenses among a wide variety of applicants."[74] In addition, the Commission found that the cap not only promoted competition, but also benefited the public interest by allowing review of CMRS acquisitions in an administratively simple manner and lending certainty to the marketplace.[75] In 1996 and 1999, the Commission reaffirmed the primary public interest purpose of promoting pro-competition ends in the CMRS markets.[76] In adopting the cellular cross-interest rule, the Commission acted "[i]n order to guarantee the competitive nature of the cellular industry and to foster the development of competing systems."[77]

2. Meaningful Economic Competition

27. In the case of the spectrum cap and cellular cross-interest rules, our inquiry focuses on the state of competition in the consumer markets for CMRS.[78] At the same time, we recognize that spectrum is an input in CMRS markets. Indeed, this recognition prompted adoption of the spectrum cap as a means of ensuring CMRS competition in the first place.[79] Although participants in the mobile telephony and CMRS spectrum markets are largely the same entities under current conditions, this could change if

[71] *CMRS Third Report and Order*, 9 FCC Rcd at 8105 ¶ 251, 8100 ¶ 238.

[72] *Id.* at 8108 ¶ 258.

[73] *Id.* at 8100 ¶ 239, 8110 ¶ 264.

[74] *Id.* at 8104 ¶ 248, 8108 ¶ 260.

[75] *Id.* at 8105 ¶ 251.

[76] *See CMRS Spectrum Cap Report and Order*, 11 FCC Rcd at 7869 ¶ 94; *First Biennial Review Order*, 15 FCC Rcd at 9221, 9249 ¶¶ 1, 66. In 1996, the Commission also found that the spectrum cap, in addition to other tools at its disposal, furthered the goals of section 309(j) of the Communications Act. *See CMRS Spectrum Cap Report and Order*, 11 FCC Rcd at 7873-74 ¶ 102. We note that there are other tools to achieve goals other than competition, including case-by-case review, as well as prescribing license area designations and bandwidth assignments, and using bidding credits to create opportunities for new entrants.

[77] *Cellular First Report and Order*, 6 FCC Rcd at 6628 ¶ 104.

[78] In doing so, we consider not only competition among providers of CMRS, but also competition between these providers and providers of other telecommunications services, including wireline services. *See infra* paras. 36-37.

[79] *See, e.g., CMRS Third Report and Order*, 9 FCC Rcd at 8100-01, 8105 ¶¶ 238, 240, 251; *CMRS Spectrum Cap Report and Order*, 11 FCC Rcd at 7869 ¶ 94; *Cellular First Report and Order*, 6 FCC Rcd at 6628 ¶ 104; *First Biennial Review Order*, 15 FCC Rcd at 9221, 9242, 9249 ¶¶ 1, 48, 66.

leasing arrangements become more common.[80] Again, we emphasize that the markets with which we are principally concerned are the output markets for services, and that conditions in the input markets provide only a partial proxy measure of competition in the output markets. Nonetheless, in the context of the output market, the state of control over the spectrum input is a relevant factor.

28. In evaluating CMRS markets, we consider both actual and potential competition. In general, potential competition can be as important as actual competition in promoting desirable outcomes. In the case of CMRS, however, it appears that actual competition among those firms already providing service has been the most significant factor in the gains that have been achieved in recent years.[81] There remains relatively little potential for additional entry into urban markets in the near term, because most licenses for currently allocated spectrum have been constructed and put into service. In rural markets, a significant number of licenses have not yet been put into service, but demographic and geographic conditions generally appear to render additional large-scale entry economically difficult to support. As additional CMRS-suitable spectrum becomes available, the overall effect on the CMRS marketplace of potential competition could change.

3. Necessity for Rules in the Public Interest

29. In determining whether our spectrum aggregation limits remain necessary in the public interest, we consider the original purposes for which the rules were promulgated. The purpose underlying the spectrum aggregation limits was to promote competition in CMRS markets.[82] An important consideration in determining the necessity for regulation is the availability of other, less burdensome tools to achieve these ends. In the case of the CMRS spectrum aggregation limits, these tools include case-by-case review of transactions by the Commission and DOJ, as well as our ability to shape the initial distribution of licenses through the service rules adopted with respect to specific auctions. In addition, the Commission is also obligated, pursuant to section 332(c)(1)(C) of the Communications Act, to continue to review (as it has done six times already) the state of competition among CMRS providers. Specifically, this provision states:

> The Commission shall review competitive market conditions with respect to commercial mobile services and shall include in its annual report an analysis of those conditions. Such analysis shall include an identification of the number of competitors in various commercial mobile services, an analysis of whether or not there is effective competition, an analysis of whether any of such competitors have a

[80] *See* Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets, *Policy Statement*, 15 FCC Rcd 24178 (2000) (setting forth the Commission's plans for facilitating secondary markets for radio spectrum, including leasing). *See also* Sprint and Virgin Announce Joint Venture, *News Release*, Sprint PCS (rel. Oct. 5, 2001) (announcing mobile virtual network operator ("MVNO") arrangement between Sprint PCS and the Virgin Group); Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Sixth Report*, FCC 01-192, at 35 (rel. July 17, 2001) ("*Sixth Annual CMRS Competition Report*") (stating that in 2000, "the top 20 resale providers had just over 3 million subscribers which is an increase of 100 percent over 1999").

[81] *See infra* paras. 31-32, 34-35, 38.

[82] *See, e.g.*, *CMRS Third Report and Order*, 9 FCC Rcd at 8100-01, 8105 ¶¶ 238, 240, 251; *CMRS Spectrum Cap Report and Order*, 11 FCC Rcd at 7869 ¶ 94; *Cellular First Report and Order*, 6 FCC Rcd at 6628 ¶ 104; *First Biennial Review Order*, 15 FCC Rcd at 9221, 9242, 9249 ¶¶ 1, 48, 66.

> dominant share of the market for such services, and a statement of whether additional providers or classes of providers in those services would be likely to enhance competition.[83]

Our most recent report, issued this year, has guided our decision in this proceeding, and future reports will continue to provide a useful tool for overseeing the changes, if any, in competitive market conditions. Moreover, we also have at our disposal various enforcement tools to ensure that CMRS carriers, which are common carriers under section 332(c) and key provisions of Title II of the Communications Act, do not engage in conduct that is anti-competitive or otherwise harm consumers due to excess concentration of spectrum.[84]

B. Analysis of Competition in the Mobile Telephony Markets

30. We begin our analysis by considering the state of economic competition. Various indicators confirm the presence of meaningful economic competition in markets for CMRS. As we described in the *Sixth Annual CMRS Competition Report*,[85] and as commenters generally agree,[86] mobile telephony markets have experienced and continue to experience strong growth, increased competition, and active innovation. We also find it important that competition in these markets has progressed dramatically, not only since 1994, but since our last biennial review.

31. *Number of Competitors and Concentration.* One basic indicator of meaningful economic

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[83] 47 U.S.C. § 332(c)(1)(C).

[84] *See id.* §§ 332(c), 201, 202, 208; *see also* Forbearance from Applying Provisions of the Communications Act to Wireless Telecommunications Carriers, *First Report and Order*, 15 FCC Rcd 17414, 17423 ¶ 20 (2000); Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance for Broadband Personal Communications Services, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857, 16865-66 ¶¶ 15-18 (1998) (finding that sections 201 and 202 codify the "bedrock consumer protection obligations of a common carrier" and that the Commission "has never previously refrained from enforcing sections 201 and 202 against common carriers, even when competition exists in a market."). We also note that the Commission's Consumer Information Bureau ("CIB") recently released its first quarterly report on the numbers and types of consumer complaints and inquiries CIB has received. *See* FCC Consumer Information Bureau Releases First Report on Complaints and Inquires Processed, Data Will Help Commission, Companies and Public to Track Trends, *News Release*, Oct. 23, 2001, *available at* http://www.fcc.gov/cib/news/firstreport.html (last visited Nov. 20, 2001).

[85] *Sixth Annual CMRS Competition Report*, FCC 01-192. Although the Commission noted that it could not warranty the accuracy or completeness of the individual data in the *Sixth Annual CMRS Competition Report*, all of which were taken from publicly available sources (*see id.* at 5 n.20), we find that, cumulatively, these data are more than adequate to inform our evaluation of meaningful economic competition.

[86] *See* AT&T Comments at 2; Chadmoore Comments at 2; Cingular Comments at 23-28; CTIA Comments at 14-20; Schwartz and Gale Comments on behalf of CTIA at 9-10, 21-28; Nextel Comments at 1; Verizon Comments at 8-12; Gertner and Shampine Declaration on behalf of Verizon at 5-7; Cingular Reply Comments at 4-5; CTIA Reply Comments at 2-3; Verizon Reply Comments at 5-6. *But see* Leap Comments at 5-8; Leap Reply Comments at 28-29 (arguing that the CMRS marketplace is more competitive than in the past, but not yet optimally competitive); Sprint Comments at 4 (arguing that additional competitive entry due to the spectrum cap); TDS Comments at 5-6 (remarking on "spectacular growth" of PCS and SMR service, but warning of threat to competition posed by "rise of national carriers"); WorldCom Comments at 6 (agreeing that the CMRS marketplace is increasingly competitive today, but arguing that increasing consolidation may jeopardize these gains); Southern LINC Reply Comments at 6-7 (competition in the cellular and broadband PCS market sectors has increased, but the digital SMR market is currently dominated by one provider).

competition is that most Americans have a choice of obtaining CMRS from several different providers of service.[87] As of the end of 2000, about ninety-one percent of U.S. residents lived in a county that was served, at least in part, by three or more different mobile telephony providers, and seventy-five percent of the U.S. population lived in a county where five or more providers offered service.[88] Furthermore, over 133 million people lived in counties with six or more mobile telephony providers, an increase of thirty-five percent over the previous year, and thirty-four million people lived in counties served by seven or more providers, a one-year increase of 170 percent.[89] By contrast, when the spectrum cap was first promulgated in 1994, in all but the few markets where Nextel had then launched service, consumer choice was limited to two cellular providers.

32. Measures of market concentration in the record show a substantial continuing decline in concentration in most local CMRS markets. We find that considerable entry has occurred and that meaningful competition is present, particularly given the presence of such earmarks of competition as falling prices, increasing output, and improving service quality and options. Specifically, concentration in CMRS markets, as measured by subscriber share, is falling.[90] Calculations submitted by economist John Hayes in both this record and the previous biennial review proceeding show that Herfindahl-Hirschman Indices ("HHIs")[91] in the twenty-five largest markets, calculated based on estimated subscribed customers, have fallen by an average of fifteen to twenty-five percent over the last two years.[92] This downward trend in concentration may be attributed in part to the continued construction of new entrants' networks, which has made these mobile telephony providers more viable competitors.[93]

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[87] *See* AT&T Comments at 2; Cingular Comments at 26-27; CTIA Comments at 15-16; Schwartz and Gale Comments on behalf of CTIA at 22, 24-26, Tbls. 3-4; Verizon Comments at 10; Gertner and Shampine Declaration on behalf of Verizon at 7.

[88] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 24-25. Because our analysis was limited to publicly available sources of information, this coverage percentage is based on the number of operators serving any portion of a particular county. Consequently, some counties included in this analysis may have only a small amount of coverage from a particular provider.

[89] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 25.

[90] Under the Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission, 57 Fed. Reg. 41552 (dated Apr. 2, 1992, as revised, Apr. 8, 1997) ("*DOJ/FTC Merger Guidelines*"), "market shares will be calculated using the best indicator of firms' future competitive significance." *See DOJ/FTC Merger Guidelines* at § 1.41. Thus, market shares may be based on measures of current output (in the case of CMRS, measures such as subscribers, revenue or minutes, for example) or measures of current capacity (in the case of CMRS, measures such as total quantity of spectrum available or quantity of spectrum held where service has been launched, for example). Parties have submitted both output-based and capacity-based data in the record, and we find both approaches to be informative.

[91] The HHI is calculated by summing the squares of the individual market shares of all the market participants. The HHI gives a proportionately greater weight to the market shares of the larger firms, given their relative importance in competitive interactions.

[92] *Compare* Hayes Comments on behalf of Sprint at Table 1 (calculating HHIs between 1,739 and 3,963 as of January 2001) *with First Biennial Review Order*, 15 FCC Rcd at 9236-37 ¶ 36 (citing Hayes' calculation of HHIs between 2,569 and 4,511 for the same MSAs as of January/February 1999). We note that Hayes relies on data regarding the number of subscribers per firm per city that are estimated using a sampling method that has been only briefly described. While the reported HHI *levels* may be considered uncertain, however, there is no reason to believe that the reported *change* in HHIs over time is biased.

[93] *See* Hayes Comments on behalf of Sprint at 4.

33. On the other hand, other measures of market concentration reveal moderate to high concentration levels. Using CMRS spectrum share as the capacity measure, we have calculated HHIs of 1,270 to 1,801 for the fifty most populous MSAs, and 1,246 to 2,405 for a sampling of eighty counties in RSAs.[94] These figures are generally consistent with the capacity–based HHI calculations submitted by various commenters.[95] We emphasize, however, that caution is appropriate in employing such measures, whether they reveal a positive or negative indication of concentration.[96] Although more concentrated markets can be less competitive and more vulnerable to anticompetitive activity than less concentrated markets, moderate to high concentration is not necessarily a threat to competition. For example, we have previously found that "an HHI analysis alone is not determinative and does not substitute for our more detailed examination of competitive considerations."[97] In the case of CMRS markets, for example, limits to economies of scale, technological compatibility issues, difficulties in finding a willing seller at a reasonable price, and capital market constraints limit consolidation. Moreover, antitrust review by the DOJ and section 310(d) review by the Commission continue to serve as protection against levels of consolidation that would impair competition. Furthermore, HHI measures function as indicators of the likely competitive situation – guidelines to which other information is added, as under the DOJ/Federal Trade Commission ("FTC") approach – rather than as the single factor upon which to make competitive judgments, including the judgment of whether to retain the spectrum cap rule. As the *DOJ/FTC Merger Guidelines* state, "[b]ecause the specific standards set forth in the guidelines must be applied to a broad range of possible factual circumstances, mechanical application of those standards may provide misleading answers to the economic questions raised under antitrust laws."[98]

34. Based on the record before us and publicly available evidence, however, there appears to be

[94] Under the analysis in the *DOJ/FTC Merger Guidelines*, a market is considered moderately concentrated with a post-merger HHI between 1000 and 1800, and highly concentrated with a post-merger HHI above 1800. See *DOJ/FTC Merger Guidelines* at § 1.5. In the fifty most populous MSAs, HHIs range from a low of 1,270 in Phoenix to a high of 1,801 in Rochester, New York. To evaluate concentration in RSAs, we sampled the fifty counties in RSAs with populations closest to the average RSA county population of 26,981, as well as the thirty RSA counties with populations closest to 10,000. In the fifty average population RSA counties, HHIs range from 1,246 in Del Norte County, California, to 2,405 in George County, Kansas. For the thirty RSA counties with populations closest to 10,000, HHIs range from 1,471 in Alger County, Michigan, to 2,200 in Metcalfe County, Kentucky. The fifty most populous MSAs were selected as the sample because commenters focused their analyses on the largest MSAs. *See infra* note 95. Because the record does not include evidence on concentration in RSAs, we prepared our own data for these areas based upon Commission records. To represent the data as fairly as possible, we took a statistical sampling.

[95] *See* Schwartz & Gale Comments on behalf of CTIA at Tbl. 2 (calculating HHIs in ten largest MSAs between 1,263 and 1,641 based on owned spectrum, and between 1,705 and 2,050 based on built spectrum); *see also* Economists, Inc. Comments on behalf of AT&T at 9-10, Tbls. 1-2; Strategic Policy Comments on behalf of Cingular at App. A (calculating hypothetical HHIs based on spectrum holdings).

[96] *See* Cingular Comments at 18-19, 33-34; Strategic Policy Comments on behalf of Cingular at 19-20; Schwartz and Gale Comments on behalf of CTIA at 15; Economists, Inc. Comments on behalf of AT&T at 23-24; Verizon Reply Comments at 18; Gertner and Shampine Reply Declaration on behalf of Verizon at 15-16; Cramton Reply Declaration on behalf of Leap at 13-14.

[97] *See* WorldCom, Inc. and MCI Comm. Corp., *Memorandum Opinion and Order*, 13 FCC Rcd 18025, 18084 (1998). *See also FTC v. H.J. Heinz Co.*, 246 F.3d 708, 715-16 (D.C. Cir. 2001); WILLIAM J. BAUMOL, JOHN C. PANZAR & ROBERT D. WILLIG, CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE, chs. 8-11, pp. 347-349 (Revised Ed., Harcourt Brace Jovanovich 1988).

[98] *See DOJ/FTC Merger Guidelines* at § 0.

a disparity in the amount of actual competition existing in MSAs versus RSAs. In MSAs, eighty-six percent of counties have four or more facilities-based CMRS providers serving some portion of the county, while in RSAs, twenty-four percent of counties have four or more facilities-based CMRS providers. Further, in over half of RSA counties, two or fewer licensed mobile telephony carriers are currently providing service.[99] Because these numbers include carriers that may be offering service in only a small portion of a county,[100] they may overstate the amount of actual facilities-based competition, especially in RSAs.[101] Moreover, our licensing records show that gaps in the footprints of the nationwide carriers tend to be greater in RSAs than in MSAs. Of the fifty most populous MSAs, forty have five licensed nationwide carriers, not counting Nextel,[102] and the other ten have four.[103] In a sampling of fifty average population RSA counties, by contrast, sixteen have five nationwide carriers, sixteen have four, and eighteen have fewer than four. In a sampling of thirty less populated RSA counties, eight have five nationwide carriers, nine have four, and thirteen have fewer than four.[104] Therefore, consumers in rural areas appear to have fewer choices in terms of providers, pricing plans, and service offerings than consumers in MSAs. Commenters generally agree that rural markets have significantly less competition than metropolitan areas in large part due to population density and economics.[105]

35. *Benefits to Consumers of Competition.* As the CMRS marketplace has developed, consumers in both MSAs and RSAs have realized the benefits of competition in the form of increased output, lower prices, and increased diversity of service offerings. For example, from 1993 to 2000, the number of subscribers using mobile phones jumped 584 percent, the amount of revenue the sector generated climbed 384 percent, and the number of people employed in the industry grew 364 percent.[106] In

[99] Based upon our research and publicly available sources, for RSA counties there are two or fewer providers in fifty-six percent of counties while for MSA counties there are two or fewer providers in five percent of counties.

[100] *See supra* note 88.

[101] Our PCS construction requirements require only that licensees offer adequate service to a specified percentage of the population within their licensed area, not that they cover the entire licensed area or any particular portion of that area. *See* 47 C.F.R. § 24.203. Because most MTAs and BTAs include both MSA and RSA areas, carriers generally can satisfy their construction requirements most economically by building out their networks extensively in MSAs, and little or not at all in RSAs.

[102] Nextel is excluded from this comparison because information regarding Nextel's licensing in and service to RSAs is not readily available.

[103] If the licenses in Auction No. 35 are awarded to the high bidders, each of the six nationwide carriers will have a license in each of the fifty most populous MSAs except for Cingular in Phoenix, Arizona. We note that an agreement recently has been reached between the government, Auction 35 high bidders, and Nextwave. *See* Statement of FCC Chairman Michael Powell on Conclusion of Discussions on Nextwave Licenses, *News Release*, Nov. 16, 2001, *available at* http://www.fcc.gov/Speeches/Powell/Statements/2001/stmkp140.html (last visited Nov. 20, 2001).

[104] These representative areas were the same ones used to calculate sample HHIs. *See supra* note 94.

[105] *See* NTCA Comments at 3-4; RTG/OPASTCO Comments at 4; TDS Comments at 8; UTStarcom Comments at 1; CTIA Reply Comments at 28; Sprint Reply Comments at 8-10; TDS Reply Comments at 6-7; Economists, Inc. Comments on behalf of AT&T at 18; Gertner and Shampine Reply Declaration on behalf of Verizon at 5.

[106] Cellular Telecommunications and Internet Association, Semi-Annual Mobile Telephone Internet Survey, *available at* http://www.wow-com.com/industry/stats/surveys/ (last visited Nov. 21, 2001). From (continued....)

addition, as we described in the *Sixth Annual CMRS Competition Report*,[107] and as commenters generally agree,[108] prices in mobile telephony markets are falling at an accelerating rate. During 2000, the cellular telephone component of the Consumer Price Index ("CPI") produced by the United States Department of Labor decreased by 12.3 percent, while the overall CPI increased by 3.4 percent.[109] In comparison, the cellular telephone component of the CPI from December 1997 to January 1999 decreased by 9.1 percent (8.4 percent annualized), while the overall CPI increased by 1.9 percent.[110] Several studies indicate that the entrance of new competitors into mobile telephony markets continues to reduce prices.[111] Furthermore, mobile telephony service providers are offering new and innovative pricing plans.[112] Most of the major carriers offer nationwide flat-rate, digital pricing plans, and several large carriers now offer regional flat-rate, digital pricing plans as well.[113] Further, several carriers provide international roaming services to their customers.[114] Mobile telephony providers are also offering technologically innovative services including Short Message Service ("SMS"), email, and web-based applications.[115] In addition,

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December 2000 to September 2001, mobile telephony markets experienced an increase in subscribership of approximately eleven percent to an estimated total subscribership of 121,700,000. *Id.* Although the rate of subscribership growth appears to have slowed recently, this slowing largely reflects the larger subscriber base and the general economic slowdown nationwide.

[107] Although we do not have access to comprehensive pricing data for both MSA and RSA markets, and publicly available pricing studies utilize different methodologies, we have found that the data from all these sources consistently and "clearly show that the average price of mobile telephony service has fallen since the [*Fifth Annual CMRS Competition Report*, 15 FCC Rcd 17660 (2000)], continuing the trend of the last several years." *See Sixth Annual CMRS Competition Report* at 27-28.

[108] *See* CTIA Comments at 18-21; CTIA Reply Comments at 10-11; Strategic Policy Reply Comments on behalf of Cingular at 5; Sprint Comments at 4: Gertner and Shampine Declaration on behalf of Verizon at 5-7, 15, 19; Gertner and Shampine Reply Declaration on behalf of Verizon at 2, 5-8; Verizon Comments at 9, 11-12; WorldCom Comments at 5-6; Schwartz and Gale Comments on behalf of CTIA at 26-27, Table 5; Chadmoore Comments at 2; *see also*, Leap Comments at 8-9; Cramton Declaration on behalf of Leap at 5, 10-12, 14-19 (discussing how a niche provider, such as Leap, lowers the price of local plans when it enters a market).

[109] *Sixth Annual CMRS Competition Report*, FCC 01-192, at 28.

[110] *See* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Fourth Report*, 14 FCC Rcd 10145, 10166-67 (1999) ("*Fourth Annual CMRS Competition Report*").

[111] *Sixth Annual CMRS Competition Report*, FCC 01-192, at 27-28.

[112] *See* Gertner and Shampine Declaration on behalf of Verizon at 5 and 7, Sprint Comments at 4.

[113] *Sixth Annual CMRS Competition Report*, FCC 01-192, at 29. However, these pricing plans are not available to customers that are not located in a particular carrier's facilities-based service area.

[114] AT&T, Nextel, and VoiceStream offer international roaming services. *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 29-30; see *also* AT&T Wireless International Calling, *available at* http://www.attws.com/personal/intl_calling/ (last visited Nov. 20, 2001); Nextel Global Offerings, *available at* http://www.nextel.com/phone_services/worldwide/index.shtml (last visited Nov. 20, 2001). VoiceStream also has introduced an international roaming plan. *See* VoiceStream WorldClass Roaming, *available at* http://www.voicestream.com/worldclass/default.asp (last visited Nov. 20, 2001).

[115] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 46-47; CTIA Comments at 19. Among other providers, US Cellular Corporation and Dobson Communications offer SMS, email, and information services. *See* U.S. Cellular Mobile Messaging, *available at*
(continued....)

"churn ... and continued expansion of mobile networks into new and existing markets demonstrate a high level of competition for mobile telephony customers."[116]

36. To a certain degree, mobile telephony services have begun to compete with wireline services. For some, wireless service is no longer a complement to wireline service but has become the preferred method of communication. According to a recent survey by the Yankee Group, about three percent of mobile telephony subscribers rely on their wireless phone as their only phone.[117] In another survey conducted in January 2000, twelve percent of respondents said they purchased a mobile phone instead of installing an additional wireline phone.[118] In a survey performed for the Consumer Electronics Association, three in ten mobile phone users, and forty-five percent of mobile phone users aged eighteen to thirty-four years old, stated they would rather give up their home telephone than their mobile phone.[119] In some areas, mobile phone use has begun to erode wireline revenue due to "technology substitution," that is, the substitution of new technologies for existing ones.[120] BellSouth, for example, stated in

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http://www.uscc.com/uscellular/SilverStream/Pages/h_faq_details.html?Type=2 (last visited Nov. 20, 2001); Dobson Cellular Systems Messaging Services, *available at* http://www.dobsoncellular.com (visited Nov. 20, 2001). Leap Wireless in May 2001 introduced its Telephone Entertainment Network under the brand name Slice. Slice service delivers "voice clips" (including local news and events, sports, weather, traffic, and more before calls connect) straight to the customer's wireless phones. *See* Leap Wireless New Innovations, *available at* http://www.leapwireless.com/services/content/services_ newinnovations_2.html (last visited Nov. 20, 2001). AT&T and Nextel offer electronic mail, selected web site access, and SMS. *See* AT&T 2-Way Text Messaging Service, *available at* http://www.attws.com/personal/txt_msg (last visited Nov. 20, 2001); Nextel Wireless Web Services, *available at* http://www.nextel.com/phone_services/ wirelessweb/index.shtml (last visited Nov. 20, 2001); Nextel Mobile Messaging, *available at* http://www.nextel.com/ phone_services/mobilemessaging/index.shtml (last visited Nov. 20, 2001). Cingular offers SMS, information services, and selected website access. *See* Cingular My Wireless Window Service Description, *available at* http://www.mywirelesswindow.com/features (last visited Nov. 20, 2001). Sprint offers email, selected access to websites, information services and web connection. *See* Sprint PCS Wireless Web, *available at* http://www.sprintpcs.com/wireless/index.html (last visited Nov. 20, 2001). Verizon offers email, selected access to websites, information services and web connection, and SMS. *See* Verizon Wireless Internet and Data, *available at* http://www.verizon.com/internet_data/index.html (last visited Nov. 20, 2001). VoiceStream offers SMS and wireless web connections. *See* VoiceStream iStream, *available at* http://www.voicestream.com/products/ services/istream/overview.asp; VoiceStream Ping Pong, *available at* http://www.voicestream.com/products/ services/pingpong.asp (last visited Nov. 20, 2001). Southern LINC offers selected website access and email. *See* Southern LINC My LINC, *available at* http://www.southernlinc.com/mylinc.asp (last visited Nov. 20, 2001).

[116] *Sixth Annual CMRS Competition Report*, FCC 01-192, at 21.

[117] *See* Judy Saries, *Wireless Users Hanging Up On Landline Phones*, NASHVILLE BUS. J., Feb. 2, 2001. CTIA estimates that number could be as high as 5 percent, based on a February 2000 survey it sponsored. *Consumers Replacing Landline Phones with Wireless*, KNIGHT RIDDER/TRIBUNE BUS. NEWS, Jan. 10, 2001, *available at* 2001 WL 2837499.

[118] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 34; see *also* Callie Nelson, *Replacing Landline with Wireless: How Far Can It Go?*, IDC, Dec. 2000 (citing IDC's *Personal Wireless Communications User Survey*, 2000).

[119] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 32; *see also Will Wireless Phones Make Traditional Home Telephones Obsolete?*, News Release, Consumer Electronics Association, Apr. 6, 2000.

[120] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 32; *see also* Andrew Backover, *AT&T Loss Reflects Long-Distance Shift Consumers Turn To Calling Cards, Wireless*, USA TODAY, Jan. 30, 2001, at B3.

February 2001 that it was exiting the payphone business in part due to business lost to mobile phones.[121]

37. A few mobile carriers have begun offering service plans designed to compete directly with wireline local telephone service.[122] For example, Leap, through its Cricket subsidiary, now offers its Comfortable Wireless mobile telephone service in over a dozen markets.[123] Leap's service allows subscribers to make unlimited local calls and receive calls from anywhere in the world for a flat rate of approximately $30 per month.[124] In November 2000, Leap also claimed that sixty percent of its customers use their wireless phones as their primary phone.[125] US Cellular, ALLTEL, and Rural Cellular Corporation similarly offer flat-rate or nearly flat-rate service plans in select markets.[126] Several CMRS providers have received Eligible Telecommunications Carrier status, enabling them to receive universal service funding in certain states, and some carriers are using cellular or broadband PCS spectrum to offer fixed wireless services.[127]

38. Consumers have also derived benefits in recent years from combinations as some operators have expanded their licensed service areas through acquisitions and swaps to create nationwide service providers. There are currently six nationwide mobile telephony operators: AT&T, Cingular, Nextel, Sprint, Verizon, and VoiceStream.[128] The Commission has concluded previously that mobile telephony service providers with nationwide service areas can achieve certain economies of scale and increased efficiencies compared to operators with smaller service areas.[129]

39. *Barriers to Entry*. One potential threat to the continued existence of meaningful economic competition in CMRS markets is the barrier to entry posed by the limited availability of spectrum. Ease

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[121] *See Sixth Annual CMRS Competition* Report, FCC 01-192, at 32; *see also BellSouth Announces Plans For Public Communications Unit*, News Release, BellSouth, Feb. 2, 2001.

[122] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 33. One analyst argues that recent price reductions give mobile wireless services price parity with wireline, at least at pricing around $130 per month, which includes intralata and interlata calls as well as calling card charges. *See* Daniel J. Berninger, *Telephony Unplugged: Wireless Achieves Price Parity with Wireline, available at* http://slides.pulver.com/slides/login.asp (last visited Nov. 20, 2001).

[123] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 34; Cricket Service Areas, *available at* http://www.cricketcommunications.com/areas.asp (last visited Nov. 20, 2001); *see also* Cramton Declaration on behalf of Leap at 7-8, 10.

[124] *See* Cramton Declaration on behalf of Leap at 7-8. The monthly fee for Leap's service varies slightly by service area. *See id.*

[125] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 34; Deborah Young, *Usurping Wired Services: Lofty Goal, But ...* , WIRELESS REV., Nov. 1, 2000, *available at* 2000 WL 7119447; *see also* Cramton Declaration on behalf of Leap at 8.

[126] *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 34.

[127] *Id.* at App. A at A-5-6.

[128] A mobile telephony provider that is called "nationwide" does not necessarily hold licenses, have service areas, or offer pricing plans that cover the entire land area of the United States. Firms that are considered nationwide offer facilities-based service in at least some portion of the western, midwestern, and eastern United States. *See Sixth Annual CMRS Competition Report*, FCC 01-192, at 13 n.62.

[129] *Fourth Annual CMRS Competition Report*, 14 FCC Rcd at 10159-60, 10175.

of entry is an important factor when determining if firms in a given product and geographic market will be able to exercise market power.[130] "[E]ntry is . . . easy if entry would be timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects of concern."[131] In particular, we note that antitrust authorities "will consider timely only those committed entry alternatives that can be achieved within two years from initial planning to significant market impact."[132] Unfettered market competition forces prices to the level of production costs. Markets function optimally only if one or more firms are able to enter a market or expand current production swiftly and effectively in response to the elevation of prices (or degradation of service) by one or more firms attempting to exercise market power.[133] Therefore, in evaluating the state of the market we consider whether barriers to entry exist and, if so, how pronounced these barriers to entry are, with the ultimate goal of determining whether potential entry would be timely, likely, and sufficient to discipline the market.

40. The requirement to obtain access to spectrum constitutes a barrier to facilities-based entry into the CMRS marketplace because the supply of suitable spectrum is limited. Facilities-based mobile telephony service cannot be offered without access to suitable spectrum, and a government license is required to use spectrum to provide CMRS.[134] Some commenters argue that, because CMRS spectrum allocations have been made, this barrier to entry has been reduced.[135] Other commenters, however, argue that it is typically difficult to acquire the spectrum necessary to enter a CMRS market.[136] Leap, in particular, emphasizes that the finite amount of spectrum suitable for CMRS is an "insurmountable barrier to entry."[137] We find that the limited amount of spectrum suitable for CMRS available today creates a significant barrier to entry, at least in MSAs. Most of the spectrum currently subject to the cap either has been assigned or is being considered for assignment to the high bidder at auction. In most cases, the high bidder is either an existing market participant or its affiliate. Although some of this spectrum is currently unused or underused, the total pool of such spectrum is finite, and the amount that is not controlled by a provider that has launched service, particularly in MSAs, is small.

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[130] Entry does not necessarily have to occur to preclude the exercise of market power. In certain circumstances, the threat of entry is sufficient to discipline the market. *See* BAUMOL, PANZAR & WILLIG, *supra* note 97, at 317-318.

[131] *DOJ/FTC Merger Guidelines* at § 3.0.

[132] *Id.* § 3.2.

[133] *See id.* § 3.0.

[134] We note that we are considering in another proceeding potential measures to facilitate access to spectrum by means of lease or other arrangement with an existing licensee. *See* Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Notice of Proposed Rulemaking*, 15 FCC Rcd 24203 (2000). Even if adopted, however, these measures would not change the requirement of access to suitable spectrum.

[135] *See* CTIA Comments at 22; Schwartz and Gale Comments on behalf of CTIA at 9; Cingular Comments at 22-23; Verizon Comments at 8, 15; Gertner and Shampine Declaration on behalf of Verizon at 3; Cingular Reply Comments at 22.

[136] *See* Leap Reply Comments at 8; Cramton Reply Declaration on behalf of Leap at 10-11; Sprint Reply Comments at 6; WorldCom Comments at 6.

[137] Leap Comments at 12; Leap Reply Comments at 3, 8; Cramton Reply Declaration on behalf of Leap at 10-11.

41. Some commenters argue that availability of spectrum is not a significant barrier to entry because other spectrum, not covered by the cap, is a viable substitute for the provision of mobile telephony services. Specifically, commenters identify spectrum allocated for Mobile Satellite Service ("MSS"), big Low Earth Orbit ("LEO") satellite service, Multipoint Multichannel Distribution Service and Instructional Television Fixed Service ("MDS/ITFS"), Wireless Communications Service ("WCS"), and CMRS other than cellular, broadband PCS, and SMR, as well as spectrum that has been (or is soon likely to be) reallocated from television Channels 52-59 and 60-69.[138] Much of this spectrum, however, either is not currently allocated for mobile terrestrial use,[139] is subject to technical and use restrictions that prevent offering of full mobile telephony services,[140] or has insufficient capacity to support significant mobile telephony competition.[141] We believe the spectrum bands that are most likely to support additional competition to the services offered over cellular, broadband PCS, and SMR spectrum in the reasonably near future are the 1.7 and 2.1 GHz bands that are being considered for mobile allocation in our so-called "3G" proceeding, and the bands reallocated from television Channels 60-69. However, this spectrum is still at least several months away from being assigned,[142] and after assignment

[138] Specifically, economists for Cingular propose including 70 MHz of spectrum at 2GHz (MSS from Broadcast Satellite Service), 36 MHz of 700 MHz from Channels 60-69 (including 6 MHz Guard Band), 33 MHz of Big LEOs, 196 MHz of MMDS/ITFS, 48 MHz of Channels 52-59, and 30 MHz of WCS. *See* Strategic Policy Comments on behalf of Cingular at 12, 16-17, App. A, A1-A4; Cingular Comments at 21-22; *see also* Economists, Inc. Comments on behalf of AT&T at 6, 8-10, Tbls. 1-2 (proposing that the potential market could be expanded to include as much as 225 MHz of spectrum and that the market definition eventually must consider wireline services).

[139] *See generally* 47 C.F.R. § 2.106. *But see* Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band, Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service, *Notice of Proposed Rulemaking*, 16 FCC Rcd 15532 (2001) (seeking comment, *inter alia*, on whether terrestrial mobile services can by employed in these frequency bands and whether eligibility should be limited to incumbent mobile satellite licensees).

[140] *See* Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, Amendment of the U.S. Table of Frequency Allocations to Designate the 2500-2520/2670-2690 MHz Frequency Bands for the Mobile-Satellite Services, *First Report and Order and Memorandum Opinion and Order*, ET Docket No. 00-258, FCC 01-256, ¶¶ 19-30 (rel. Sep. 24, 2001) (adding a mobile allocation to the 2500-2690 MHz band, but recognizing that the Commission must explore in a separate future proceeding the service rules that will apply to permit mobile operations in the band); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisisons to Part 27 of the Commission's Rules, *Second Report and Order*, 15 FCC Rcd 5299, 5308 ¶ 19 (2000) (prohibiting cellular system architectures in the 700 MHz Guard Bands in order to provide intereference protection to public safety operations); Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service, *Report and Order*, 12 FCC Rcd 10785, 10833 ¶ 89 (1997) (stating that out-of-band emission limits adopted likely would make mobile operations in the WCS spectrum technologically infeasible).

[141] *See* Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Second Report and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 2732, 2777-78 ¶ 88 (1997) (declining to include narrowband radio services in the spectrum cap because "it is highly unlikely that one entity could ever accumulate as much as 5 MHz in any given geographic market").

[142] The auction for spectrum reallocated from Channels 60-69 is scheduled to begin on June 19, 2002. *See* Auction of Licenses for 747-762 and 777-792 MHz Bands (Auction No. 31) Scheduled for June 19, 2002, *Public Notice*, DA 01-2394 (rel. Oct. 15, 2001), *available at* http://www.fcc.gov/wtb/auctions/31/ (last visited Nov. 20, 2001) ("*Channels 60-69 PN*"). A proceeding for reallocation of "3G" spectrum from federal government (continued....)

it will take time for incumbent users to be relocated and following that for licensees to build out their networks.[143] Thus, although we expect that 3G and Channels 60-69 spectrum will offer some potential for near-term entry over the next few years, the availability of spectrum suitable for CMRS remains a barrier to entry in the near term.

42. Nonetheless, there are factors that moderate concern regarding the spectrum access barrier to entry. In particular, the need for direct access to spectrum is not absolute because carriers can compete in the provision of CMRS without direct access to spectrum through resale,[144] or a mobile virtual network operator ("MVNO") arrangement.[145] However, it is not clear that these options have more than a limited role today.[146] The transition period we adopt today also helps to minimize the problem of spectrum access because, while future allocations do not respond to the needs of the marketplace today, we expect that additional spectrum will be available at the end of the transition period, or shortly thereafter.

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use is currently pending. *See* Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, ET Docket No. 00-258, *Notice of Proposed Rulemaking*, 16 FCC Rcd 596 (2001) ("*3G NPRM*"); *see also* Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, ET Docket No. 00-258, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, FCC 01-224 (rel. Aug. 20, 2001 ("*3G Further Notice*"); Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, ET Docket No. 00-258, *First Report and Order and Memorandum Opinion and Order*, FCC 01-256 (rel. Sept. 24, 2001) ("*3G First Report and Order*"). As discussed below, we are hopeful that this spectrum will be assigned within a framework of approximately twelve to twenty-four months. *See infra* para. 76.

[143] *See generally*, Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Order on Reconsideration of the Third Report and Order*, FCC 01-258 (rel. Sep. 17, 2001) ("*Channels 60-69 Order on Reconsideration*"); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Third Report and Order*, 16 FCC Rcd 2703 (2001); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 20845 (2000); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *First Report and Order*, 15 FCC Rcd 476 (2000); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Notice of Proposed Rulemaking*, 14 FCC Rcd 11006 (1999).

[144] *See* 47 C.F.R. § 20.12(b)(1) (prohibiting restrictions on resale by certain cellular, broadband PCS, and SMR providers unless the provider can demonstrate that the restriction is reasonable). We note that the provision will sunset on November 24, 2002. *Id.* § 20.12(b)(3).

[145] An MVNO arrangement is one in which "a network operator acts as a wholesaler of airtime to another firm, which then markets itself to users just like an independent operator with its own network infrastructure." Tom Standage, *The Internet, untethered*, THE ECONOMIST, Oct. 11, 2001, at 16. We note, however, that resale and MVNO carriers are likely to be less effective than facilities-based competitors in disciplining the market and encouraging innovation because they are dependent on the underlying carrier's wholesale price and service platform.

[146] We note that the top 20 resellers account for approximately three percent of total wireless subscribers, and WorldCom (ten times larger than the next largest reseller) accounts for approximately 65 percent of subscribers among the top 20 resellers. *See* RCR Top 20 Resellers, RCR WIRELESS NEWS, Jan. 8, 2001, at 18; *see also* Cellular Telecommunications and Internet Association, Semi-Annual Mobile Telephone Internet Survey, *available at* http://www.wow-com.com/industry/stats/surveys/ (last visited Nov. 21, 2001).

43. Although access to spectrum does not appear to be a substantial barrier to entry in RSAs, as in these areas there is typically a significant amount of unused spectrum, the other costs of serving high-cost and low-density areas may make it unlikely that competition in RSAs will increase to a level rivaling that of MSAs.[147] Specifically, the cost of building out a network with pervasive coverage is likely to be higher in rural than in urban areas (especially for digital networks on 1.9 GHz PCS spectrum with lower power handsets), and revenue potential is lower. Thus, the potential revenue from initiating or expanding service in an RSA may not be sufficient to cover the costs of building out the network, including any opportunity costs associated with directing resources to rural buildout instead of enhancing the carrier's network in urban areas. In addition, it would likely be time-consuming for a new entrant to access sufficient capital, build out its network to a sufficient degree to effectively market its services, and attract a sufficient subscriber base to discipline the market. Although we do not have sufficient record evidence to evaluate the likely development of the market in RSAs, the underlying economics appear to make it unlikely that competition in RSAs will evolve in the near term to rival that in MSAs.

44. *Other Issues.* Various commenters discuss the potential for CMRS providers to foreclose entry by anticompetitive warehousing of spectrum.[148] Some commenters argue that it is unlikely that carriers have an incentive to warehouse spectrum because the cost of acquiring spectrum and meeting the Commission's buildout requirements is high.[149] Other commenters, however, argue that CMRS providers have an incentive to warehouse spectrum either by purchasing more spectrum than can be used or by investing in inefficient technologies.[150] Even if a carrier did not deliberately set out to foreclose competition, Leap contends that the profits from doing so may be an attractive side effect of spectrum aggregation.[151] We do not have evidence that firms are currently holding excess spectrum in order to deter entry or that the benefits of excluding competitors would exceed the cost of acquiring spectrum and the free-rider problem of several incumbents benefiting from one incumbent's expenditure. However, it is at least a threshold possibility that because the supply of suitable spectrum is limited, firms in CMRS markets might choose to overinvest in spectrum in order to deter entry, depending on the costs of doing

[147] *See First Biennial Review Order*, 15 FCC Rcd at 9257 ¶ 84.

[148] In itself, it is not necessarily anticompetitive for a firm to acquire or retain control over spectrum that it does not need immediately. To the contrary, because of the finite amount of suitable CMRS spectrum, it may be a prudent business decision under some circumstances for firms to hold spectrum in anticipation of future needs. A firm could act anticompetitively, however, if it holds spectrum that it does not need – either by permitting it to go unused or by utilizing it inefficiently – primarily to prevent a competitor or potential competitor from using that spectrum.

[149] *See* Cingular Comments at 29, 32; Cingular Reply Comments at 21-22; Verizon Comments at 8; Gertner and Shampine Reply Declaration on behalf of Verizon at 3-6.

[150] *See* Leap Comments at 11, 29; Cramton Declaration on behalf of Leap at 25; UTStarcom Comments at 2; Leap Reply Comments at 22-24; Cramton Reply Declaration on behalf of Leap at 11; Consumer Groups Reply Comments at 2 (expressing concern that by raising or eliminating the spectrum cap rule large mobile wireless providers that are affiliated with wireline companies will have the opportunity "to lock up spectrum and keep at bay those who would compete with their wireline businesses"); Newcomb Reply Comments (arguing that carriers find it easier to add more channels to existing cells than to reorganize their systems to maximize spectral efficiency).

[151] *See* Leap Comments at 12. Leap further argues that the greater an individual provider's share of a market, the greater the provider's potential profits from warehousing spectrum. *See id.* at 10-12, 29; *see also* Cramton Declaration on behalf of Leap at 25; Cramton Reply Declaration on behalf of Leap at 24.

so.[152]

45. One commenter also suggests that collusion among CMRS providers may warrant ongoing consideration. Leap notes that pricing plans for CMRS offerings are similar among the national carriers, and price comparisons of these plans can easily be performed, facilitating price coordination.[153] Further, Leap argues that experience in the marketplace shows carriers behaving in a largely oligopolistic fashion by offering largely identical products at prices far above their marginal costs.[154] However, AT&T argues that anticompetitive collusion is unlikely in CMRS markets because these markets have well-capitalized actual and potential competitors, and demand is increasing.[155] Further, according to AT&T, it is relatively easy for existing competitors to add capacity in response to any price increase, and therefore firms cannot profitably reduce output and sustain a high price for a significant period of time.[156] Cingular and Verizon argue that the large number of competitors and the complexities of the various pricing plans make coordination unlikely.[157] Although the record does not indicate that tacit collusion is occurring or is likely to occur, CMRS markets do meet many of the criteria that make tacit collusion sustainable.[158] Moreover, tacit collusion becomes more likely as the number of competitors is reduced.[159]

46. *Conclusion.* In light of all the factors discussed above, we find that there is meaningful economic competition in CMRS mobile telephony generally. Evidence in MSAs regarding the current state of these markets clearly shows that the presence of multiple competitors is effectively restraining prices, promoting innovation and diversity, and increasing output. Based on the information available, competition in RSAs appears to be less robust than in MSAs. Finally, to the extent that competitive concerns are raised in a particular proposed assignment or transfer of control application, as discussed below, we believe they can be addressed through means other than the spectrum cap.

C. Repeal and Interim Modification of the Spectrum Cap

47. Currently, we evaluate the competitive effects of the acquisition of CMRS spectrum primarily through the general application of numerical thresholds such as the spectrum cap. We could,

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[152] *See* JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 324-28 (MIT Press 1988).

[153] *See* Cramton Reply Declaration on behalf of Leap at 8-9.

[154] *See* Leap Comments at 5; *see also* Newcomb Reply Comments (arguing that "Leap's contention that consumers will not obtain innovative services from dominant carriers is probably correct").

[155] *See* AT&T Comments at 10-11.

[156] *See id.* at 11-12.

[157] *See* Cingular Reply Comments at 20; Verizon Comments at 8, 14-15; Gertner and Shampine Declaration on behalf of Verizon at 3, 7-8, 20.

[158] Specifically, the nationwide carriers may be characterized as having relatively homogeneous products, prices are public and uniform, firms have extensive multimarket contact, detection of cheating would be easy, and credible retaliation strategies exist. *See* TIROLE, *supra* note 152, at 240-43.

[159] *See* Richard Selten, *A Simple Model of Imperfect Competition Where 4 Are Few and 6 Are Many*, 2 INT'L. J. OF GAME THEORY 141-201 (1973); Alexis Jacquemin & Margaret E. Slade, *Cartels, Collusion, and Horizontal Merger*, *in* HANDBOOK OF INDUSTRIAL ORGANIZATION, Vol. 1, at 415-463 (Richard Schmalensee & Robert Willig eds., 1989); George Stigler, *A Theory of Oligopoly*, 72 J. POL. ECON. 44-61 (1964); *see also FTC v. H.J. Heinz Co.*, 246 F.3d at 715-16, 724-25.

however, fulfill our duties under section 310(d) and other statutory provisions through case-by-case review of individual transactions. In light of our finding of meaningful economic competition above, we conclude that long-term retention of the spectrum cap rule is no longer necessary in the public interest, and we therefore move to repeal that rule. At the same time, we conclude that it is necessary in the public interest to retain the rule for a limited transition period to allow the market to adjust and enable us to consider guidelines for case-by-case review of CMRS spectrum aggregation transactions. Finally, during the transition period, we modify the rule by increasing the spectrum cap to 55 MHz in all areas.

1. Move from Prophylactic Rule to Case-by-Case Review

48. Background. With respect to the appropriate regulatory tool for reviewing potential effects on competition in CMRS markets, proponents of the current spectrum cap generally favor a bright-line approach, arguing that a bright line promotes regulatory certainty and significantly reduces the processing time of transfer and assignment applications.[160] Leap argues that determining how to apply the rule in a particular case is easier than gathering the information that transacting parties may be required to submit under a case-by-case approach, such as potentially sensitive customer and market share information.[161] Generally, opponents of the current spectrum cap argue that case-by-case review is preferable to a prophylactic approach because the case-by-case approach is more flexible and reduces the possibility of blocking transactions that are actually in the public interest or, alternatively, permitting transactions that are not in the public interest.[162]

49. Discussion. We conclude that it is appropriate to move in the very near future from reliance on a prophylactic rule of general application to pure case-by-case review. In assessing the choice of an appropriate tool, we recognize that different costs and benefits can be associated with bright-line rules and case-by-case review with respect to degree of flexibility, predictability of outcome, likelihood of rejecting beneficial (or approving harmful) transactions, ability to account for the particular attributes of a transaction or market, speed of decision-making, and resource demands on the Commission and carriers.

50. On balance, and in light of the growth of both competition and consumer demand in CMRS markets, we conclude that case-by-case review, accompanied by enforcement of sanctions in cases of misconduct, is now preferable to the spectrum cap rule because it gives the Commission flexibility to reach the appropriate decision in each case, on the basis of the particular circumstances of that case.[163] The development of competition among CMRS carriers since the 1999 biennial review is an important factor underlying this conclusion. We are persuaded that competition is now robust enough in CMRS markets that it is no longer appropriate to impose overbroad, *a priori* limits on spectrum aggregation that may prevent transactions that are in the public interest. As discussed below, we commit ourselves to increasing Commission resources available to review spectrum aggregation transactions and to considering appropriate guidelines for review of future transactions, in order to continue to provide

[160] *See* Leap Comments at 30-31; WorldCom Comments at 7; Leap Reply Comments at 14-15.

[161] *See* Leap Reply Comments at 13-14.

[162] *See* CTIA Comments at 45; Schwartz and Gale Comments on behalf of CTIA at 5-6, 11-15; Economist, Inc Comments on behalf of AT&T at 22-25; AT&T Comments at 10.

[163] We reject the argument of CTIA that the difficulty of applying the attribution and overlap provisions of our current rules is a reason to abandon the spectrum aggregation limits. *See* CTIA Comments at 31-34. Whether we apply a bright-line rule or use case-by-case analysis to determine which transactions are in the public interest, determinations regarding appropriate attribution and overlap must be made and may be complex.